

About this Document

These course materials were written to support the online module which is available at www.plumsolutions.com.au. The courseware which includes this material and the online component remains the intellectual property of Plum Solutions Pty Ltd.

These materials are distributed to enrolled students of this course, and may be stored for personal future reference, but no part of this publication may be reproduced in any form, or distributed in any way without written permission from Plum Solutions Pty Ltd.

Forecasting or Trend Functions

Using forecasting or trend functions, Excel handles quite well using regression analysis. Let's take a look at some of those.

Open up the file on forecasting and we have got some historical data with some sales and we are going to use that data to forecast out into the future. First of all, I am going to create a simple line chart so that we can see visually what the data is doing. Highlight the data, select insert and then add in a line chart. You can click in the chart, right click and select add trend line; a linear trend. What that does is it looks at the relationship between the X axis and the Y axis or looks at the line of best fit. It says out into the future this is theoretically the trend line of what the data is doing. What the forecast function does is use exactly that trend line. What we will do now is go in and create a formula that does that. Excel is pretty clever; if you were to just highlight the data and drag it down, it would actually forecast something straight along the trend line but we know that is not very good modelling practice because we can't see where the numbers came from, so by doing that it's just hard coded. I am going to undo that.

I am going to create a forecast function and come up with exactly the same numbers. Put equals forecast, X is the point on the X axis for which you want to forecast, the known Y is the historical Y's like that and the known X's are the corresponding points on the X axis. In the chart wizard they have dumbed it down for us. They have called it the horizontal axis and the vertical axis. For these formulas they still call it the X and the Y. The points on the X axis are usually the dates and the Y axis is usually the numbers. Select okay and if you copy that down, you can see here; didn't I say that it was going to be exactly along the trend line and you can see here that it's actually, if I use my F2, you can see that because I didn't add

Financial Modelling in Excel

any dollar signs in it, it becomes like a rolling forecast. It becomes a forecast on a forecast on a forecast. It becomes less accurate over time. That wasn't a great way of doing it. What I am going to do now is go back to the original and go into my formula and hit F4 and copy it down. You can see there that it is hitting straight along the trend line and is exact. That is just using a forecast function. You can use a trend function as well. It uses a slightly different method. For our purposes it comes up with a very similar amount. That is something that you can use in financial models to calculate forecasts out into the future.

This will work in any version of Excel. Something new that has come out in Excel 2016 is something called the Forecast Sheet. If you are using 2016, you can follow along with me or you can sit back and watch what I am doing. You will see that the Forecast Sheet is here. Just click anywhere within your data and select Forecast Sheet, it's going to automatically do what we just did manually. It creates a forecast with three different confidence intervals. What it does which we couldn't do very easily with the forecast function, is it actually calculates some seasonality within the data which is fantastic. You can select no confidence interval and you can play around with different options. It is very similar to the formula that we just created. If I select no confidence interval and then select create, you can see it does a very similar thing to what we've just done except it is much more accurate. It looks more realistic as to what the data would actually look like. If you go into the formula, you can see here that it has automatically created the function. It is fairly similar to what we did manually but it is far more accurate because it automatically detects the seasonality. It's using ETS which stands for exponential triple smoothing which calculates it all for you.

If you are using the new Excel 2016, you can use this new feature here or in any previous versions you can just use either the trend or forecast function to calculate it automatically.